Guidelines and Principles For Social Impact Assessment

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Contents

Introduction

Since passage of the National Environmental Policy Act (NEPA) of 1969, environmental impact assessment has become the key component of environ-mental planning and decision making in the United States. More recently, agency planners and decision makers have recognized a need for better under-standing the social consequences of projects, pro-grams and policies. In response to this need a group of social scientists formed the Interorganizational Committee on Guidelines Principles for Social Impact Assessment (SIA), with the purpose of outlining a set of guidelines and principles that will assist agencies and private interest in fulfilling their obligations under NEPA, related authorities and agency mandates.

By "social impacts" we mean the consequences to human populations of any public or private actions that alter the ways in which people live, work, play, relate to one another, organize to meet their needs and generally cope as members of society. The term also includes cultural impacts involving changes to the norms, values, and beliefs that guide and rationalize their cognition of themselves and their society.

In this monograph, however, we define social impact assessment in terms of efforts to assess or estimate, in advance, the social consequences that are likely to follow from specific policy actions (including programs, and the adoption of new polices), and specific government actions (including buildings, large projects and leasing large tracts of land for resource extraction), particularly in the context of the U.S. National Environmental Policy Act of 1969 or "NEPA" (P.L. 91-190, 42 U.S.C. 4371 et seq.).

A central requirement of NEPA is that before any agency of the federal government may take "actions significantly affecting the quality of the human environment" that agency must first prepare an Environmental Impact Statement (or EIS). Preparing an EIS requires the integrated use of the social sciences.

The social science components of EISs are called social or socioeconomic impact assessments, or simply SIAs. Several federal agencies have moved to develop SIA guidelines, but most have not. Even within agencies that have SIA guidelines there is variation on how the social component of NEPA is to be implemented. Since the passage of NEPA there has never been a systematic interdisciplinary statement from the social science community as to what should be in the content of an SIA, even though the term "social impact assessment" was first used when the Department of the Interior was preparing the EIS for the Trans-Alaska pipeline in the early 1970's.

The purpose of this monograph is to present the central principles and some operational guidelines for use by federal agencies in conducting social impact assessments.

The organizations and individuals listed on the cover sheet represent both relevant social science disciplines and persons who have done SIAs both in federal agencies and the private sector, and those who have taught courses and conducted social impact assessment research through universities. This document is the first systematic and

interdisciplinary statement to offer guidelines and principles to assist government agencies and private sector interests in using SIA to make better decisions under NEPA and related authorities (see Section II). These guidelines and standards are equally important for those communities and individuals likely to be affected by proposed actions in order that they might conduct independent assessments or evaluate the adequacy of SIAs. Within these few pages we cannot cover over two decades of research on "social effects," much less every contingency that may occur in the course of implementing a proposed project or policy change. However, we do provide a broad overview, focusing less on methodological details and more on the guidelines and principles for the preparation of technically and substantively adequate SIAs within reasonable time and resource constraints.

Listed alphabetically, the paper was prepared by Burdge, Fricke, Finsterbush, Freudenburg, Gramling, Holden, Llewwellyn, Petterson, Thompson and Williams. Comments were received from Hobson Bryan, Tom Greider, Lambert Wenner, and Richard Stoffle. A previous draft of the paper was given with the title, "Social Impact Assessment: Principles and Standards for U.S. Federal Agencies and U.S. Sponsored Donor Agencies," as a parallel plenary session at the 13th Annual Meeting of the International Association for Impact Assessment, Qian He Hotel, Shanghai, China, June 12-15, 1993 and included in the Abstracts (p. 15-16).

Legal Mandates and Administrative Procedures for Social Impact Assessment

Section II of the monograph provides a brief over-view of the legal mandates and the administrative procedures that shape SIAs done in the context of environmental impact statements; Section III pro-vides a basic model for social impact assessment; Section IV outlines the steps in doing an SIA; and Section V provides principles and guidelines for doing social impact assessment. We concluded with a list of east-to-obtain references.

Prior to the enactment of the National Environ-mental Policy Act, analysis of the social consequences of major projects often was fragmented and lacking in focus. For example, when construction-related impacts of public works projects were at issue, attention was generally centered on economic considerations. The prevailing view was that money could compensate for any adverse impacts. There was minimal concern for social impacts even if entire neighborhoods had to be displaced so long as comparable housing could be located elsewhere. There was even less concern for the distribution or "equity" of these impacts on different populations. Also lost in this process was the important people attach to their communities and neighborhoods; and particularly to long-standing social networks that form the basis of support both for daily living and during periods of extreme stress and hardship.

The passing of NEPA created a different, but somewhat vague, set of requirements for federal agencies; among these is the integrated use of the social sciences in assessing impacts on the human environment. Over the years, the legal definition of "human environment" has undergone substantial modification as a result of court decisions stemming from NEPA-related litigation. The council on Environmental Quality's (CEQs) Regulations for Implementing the Procedural Provisions of the National Environmental

Policy Act (40 CFR 1500-1508) point-out that the "human environment" is to be "interpreted comprehensively" to include "the natural and physical environment and the relationship of people with that environment" (40 CFR 1508.14). Agencies need to assess not only so-called, "direct" effects, but also "aesthetic, historic, cultural, economic, social, or health" effects, "whether direct, indirect, or cumulative" (40 CFR 1508.8).

The CEQ Regulations also contain another key provision that should be noted: "...economic or social effects are not intended by themselves to require preparation of an environmental impact statement" (40 CFR 1508.14). However, when an EIS is prepared "and economic or social and natural or physical environmental effects are interrelated, then the environmental impact statement will discuss all of these effects on the human environment" (40 CFR 1508.14). The EISs are thus intended to provide a kind of full-disclosure procedure for federal decision-makers, who are then expected to consider the negative as well as the positive implications of potential courses of action, and the unintended as well as the intended consequences, before they proceed.

NEPA also provides citizens with the opportunity to challenge agency decisions; again in this case, however, NEPA's provisions are often misunderstood. The greatest level of legal vulnerability for the agency is not created by taking actions that will create negative impacts. It comes from failing to consider or fully analyze those impacts in advance. Most federal agencies are required to establish government-to-government relationships with American Indian tribes. The requirement is passed on to states, cities, and counties when federal funds are involved. The special status of American Indian tribes is recognized in the CEQ Regulations with early knowledge of projects, participation in the formulation of issues and data collection, and comments on drafts whenever a project can impact Indian people living on a reservation.

American Indian concerns are to be included in an EIS whenever a project affects any of their culture's resources on or off current reservation lands. American Indian rights in the SIA process have been expanded by the American Indian Religious Freedom Act (PL 95-341) and the Native American Graves Protection and Repatriation Act of 1990. Although neither act was specifically designed to affect the NEPA and SIA processes, both acts have resulted in special sections in EISs involving traditional Indian lands.

Figure 1 presents a brief chronology listing statutes and regulations that directly or indirectly man-date the conduct of social impact assessment. However, the NEPA requirements were first. They continue to have the broadest applicability in the U.S., and thus were focused on social impact assessment within that context.

Figure 1. Statutes and Regulations that Mandate or Contain Provisions for the Conduct of Social Impact Assessment

1970	National Environmental Policy Act of 1969.	Calls for the integrated use of the social sciences in assessing impacts "on the human environment". Also requires the identification of methods and procedures...which insure that presently unquantified environmental amenities and values be given appropriate consideration
1976	Magnuson Fishery Conservation and Management Act, as amended (16 U.S.C.A. 1801, es seg.).	Where a "system for limiting access to the fishery in order to achieve optimum yield" is deemed necessary, the Act requires the Secretary of Commerce and the regional Fishery Management Councils to consider in depth the economic and social impacts of the system.
1978	U.S. Council on Environmental Quality 1978. (40 CFR 1500-1508).	Regulations for implementing the procedural provision of the National Environmental Policy Act. "'Human environment' shall be interpreted comprehensively to include the natural and physical environment and the relationship of people with that environment."
1978	Outer Continental Shelf Lands Act, as amended (43 U.S.C.A. 1331 es seg.).	"The term 'human environment' means the physical, social, and economic components, conditions and factors which interactively determine the state, condition, and quality of living conditions, employment, and health of those affected directly or indirectly" by the resource development activities in question.
1980	Comprehensive Environmental Response, Compensation and Liability Act (26 and 43 U.S.C.A. es seg.).	Calls for working with affected publics through community relations programs and assessing community and state acceptance of Superfund plans and affecting local populations.
1982	Nuclear Waste Policy Act.	Calls for the preparation of an EIS, specific demographic limitations on siting the nuclear repository; inclusion of affected Indian Tribes in the siting process and impact assistance.
1986	Superfund Amendments and Reauthorization Act.	Work with an affected public through community relations programs and assessing the acceptance of plans by local communities.
1986	Council of Environmental Quality (40 CFR 1500-1508) re-issue of regulations implementing the procedural provisions of the National Environmental Policy Act.	The treatment of incomplete or unavailable information is clarified.

A Basic Model for Social Impact Assessment

The Link between Environmental Impact Assessment and Social Impact Assessment Impacts on the social environment resemble bio-physical impacts in several ways.

- Social and biophysical impacts can vary in desirability, ranging from the desirable to the adverse.
- They also vary in scale-the question of whether a facility will create 50 or 1000 jobs, for example, or will have the potential to spill 50 or 1000 gallons of toxic waste.
- Another consideration involves the extent of du-ration of impacts in time and space. Like bio-physical impacts, some social impacts can be of short duration, while others can last a lifetime; and some communities "return to normal" quite quickly once a source of disruption is removed, while other do not.
- Social impacts can also vary in intensity or severity, a dimension that is defined differently in different project settings, just as an objective biophysical impact (e.g., a predicted loss of 75 sea otters) might have a minor effect on populations in one location (e.g., off the coast of Alaska), while amounting to significant fraction of the remaining population in another location (e.g., off the cost of California).
- Similarly, there are differences in the degree to which both type of impacts are likely to be cumulative, at one extreme, or mutually counter-balancing, at the other.

It is important to consider the social equity or distribution of impacts across different populations. Just as the biological sections of EISs devote particular attention to threatened or endangered plant and wildlife species, the socioeconomic sections of EISs must devote particular attention to the impacts on vulnerable segments of the human population. Examples include the poor, the elderly, adolescents, the unemployed, and women; members of the minority and/or other groups that are racially, ethnically, or culturally distinctive; or occupational, cultural, political, or value-based groups for whom a given community, region, or use of the biophysical environment is particularly important.

In addition to the types of disturbances that can affect other species, humans are affected by changes in the distinctly human environment, including those associated with the phenomenon known as the social construction of reality. Persons not familiar with the social sciences are often tempted to treat social constructions as mere perceptions or emotions, to be distinguished from reality. Such a separation is not so easy to accomplish. We are careful to point out that the social construction of reality is characteristic of all social groups, including the agencies that are attempting to implement changes as well as the communities that are affected.

In the case of proposed actions that involve controversy, attitudes and perceptions toward a proposed policy change are one of the variables that must be considered in determining

the significance of impacts (40 CFR 1508.27b[4]). During controversies, participants are often tempted to dismiss the concerns of others as being merely imagined or perceived. There are two important factual reasons not to omit such concerns from SIAs and EISs, regardless of whether the views are widely accepted internally or come from an agency's critics. First, positions taken by all sides in a given controversy are likely to be shaped by (differing) perceptions of the policy or project, and the decision to accept one set of perceptions while excluding another, may not be scientifically defensible. Second, if the agency asserts that its critics are "emotional" or "misinformed," for example, it is guaranteed to raise the level of hostility between itself and community members and will stand in the way of a successful resolution of the problem.

In summary, some of the most important aspects of social impacts, involve not the physical relocation of human populations, but the meanings, perceptions, or social significance of these changes.

A Social Impact Assessment Framework

To predict what the probable impact of development will be, we seek to understand the past behavior of individuals and communities affected by agency actions, development, or policy changes.

We use a comparative SIA method to study the course of events in a community where an environ-mental change has occurred, and extrapolate from that analysis what is likely to happen in another community where a similar development or policy change is planned. Put another way, if we wish to know the probable effects of a proposed project in location B, one of the best places to start is to assess the effects of a similar project that has already been completed in location A. Specific variables to access project impacts are shown later in this section.

Figure2. Stages in Project/Policy Development

Based on the direction outlined in NEPA and the CEQ Regulations, we need to identify probable un-desirable social effects of development before they occur in order to make recommendations for mitigation. As we point out in a later section, the appropriate federal agency (in cooperation with the local community) bears responsibility for coordinating mitigation efforts. The SIA model also allows us to address the issues of alternative plans and alternative impacts of a proposed project. Moreover, because social impacts can be measured and understood, recommendations for mitigating actions on the part of the agencies can be made. In Section IV we outline a procedure for mitigating potentially adverse impacts.

It is almost impossible to catalogue all dimensions of social impacts because change has a way of creating other changes. A freeway extension facilitates residential growth which leads to increased traffic and air pollution, creation of new schools, retail centers, and other services, and the decline of a downtown neighborhood.

In Figure 3 we have identified the basic social dimensions that can be measured which reflect fundamental and important characteristics of a community. Studied over time, these characteristics give us insight as to how social structure will be altered when change occurs. Faced with a proposal to implement a new ski area, for example, the community and the agency proposing the change can profit from the experience of other comparable communities that have already undergone a ski area development and thereby gain a reasonably accurate expectation of how the project will affect their community. Forecasted impacts are the difference in the human environment between the future with the project and a future without the project. Since we cannot see the future, we look at similar communities that have experienced similar policies or projects in the past. The social impact assessment model is comparative. Our experience has shown the forecasts can be made about probable social impacts. The model also permits a restudy of the impacted community in the future to assess what the actual impact has been, so that the fit between forecasts and outcome can be matched.

One way to capture the dynamic complex quality of social impacts is to metaphorically take a series of snapshots over time as the development event or policy change unfolds and fill in what happened in between. Ideally, information about the community or geographic area of study is available both before and after the event to help in measurement. Social impacts then become the changes taking place between the two measurements points. The social assessor attempts to forecast the change associated with proposed activity, based on research and information accumulated from comparative studies of similar situations.

A strength of the comparative SIA model is that with appropriate data sources (those which can be collected frequently, such as land transfer records) it allows for an interpretation of dynamic events and can provide monitoring of short-term impacts. This kind of frequent monitoring provides a continual source of evaluation or check on the direction of forecasts made about social impacts.

Stage in Project/Policy Development

All projects and policies go through a series of steps or stages, starting with initial planning, then implementation and construction, carrying through to operation and maintenance (see Figure 2). At some point the project might be abandoned or decommissioned, or official policy could change. Social impacts will be different for each stage. Scoping of issues prior to analysis may lead the assessor to focus only on one stage. For example, one community might be concerned about public reaction resulting from initial siting of a hazardous waste disposal facility; another with the construction aspects of reservoirs; and a third might be faced with a change in the designation of

adjacent public land from timber production to wilderness use. The specific stage in life of the project or policy is an important factor in determining effects. Not all social impacts will occur at each stage. Figure 2 illustrates the stages in project development.

1. Planning/Policy Development

Planning/policy development refers to all activity that takes place from the time a project or policy is conceived to the point of construction activity or policy implementation. Examples include project design, revision, public comment, licensing, the evaluating of alternatives, and the decision to go ahead. Social impacts actually begin the day the action is proposed and can be measured from that point.

Social assessors must recognize the importance of local or national social constructions of reality, which begin during the earliest of the four stages-the planning/policy development stage. We often assume that no impacts will take place until Stage 2 (construction/implementation) begins on a project -through dirt-moving operations, for example, or the start-up of construction activities. However, real, measurable, and often significant effects on the human environment can begin to take place as soon as there are changes in social or economic conditions. From the time of the earliest announcement of a pending policy change or rumor about a project, both hopes and hostilities can begin to mount; speculators can lock up potentially important properties, politicians can maneuver for position, and interest groups can form or redirect their energies. These changes occur by merely introducing new information into a community or region.

2. Construction/Implementation

The construction/implementation stage begins when a decision is made to proceed, a permit is issued or a law or regulation takes place. For typical construction projects, this involves clearing land, building access roads, developing utilities, etc. Displacement and relocation of people, if necessary, occurs during this phase. Depending on the scale of the project, the buildup of a migrant construction work force also may occur. If significant in-migration occurs, the new residents may create a strain on community infrastructure, as well as creating social stresses due to changing patterns of social interaction. Communities may have difficulties in responding to the increased demands on school, health facilities, housing and other social services. Further stresses may be created by resentments between newcomers and long-time residents, by sudden increases in the prices for housing and local services, and even by increased uncertainty about the future. When new policies are implemented, local economies and organizations may change, and old behavior are replaced with new ways of relating to the environment and its resources.

3. Operation/Maintenance

The operation/maintenance stage occurs after the construction is complete or the policy is fully operational. In many cases, this stage will require fewer workers than the construction/implementation phase. If operations continue at a

relatively stable level for an extended period of time, effects during this stage can often be the most beneficial of those at any stage. Communities seeking industrial development will often focus on this stage because of the long-term economic benefits that may follow from a development. It is also during this stage that the communities can adapt to new social and economic conditions, accommodation can t take place, and the expectations of positive effects-such as stable population, a quality infrastructure, and employment opportunities-can be realized.

4. Abandonment/Decommissioning

Abandonment/decommissioning begins when the proposal is made that the project or policy and associated activity will cease at some time in the future. As in the planning stage, the social impacts of decommissioning begin when the intent to close down is announced and the community or region must again adapt, but this time to the loss of the project or an adjustment to a policy change. Some-times this means the loss of the economic base as a business closes its doors. At other times, the disruptions to the local community may be lessened or at least altered if one type of worker is replaced by another, as in a case such as the Hanford Facility in Washington State, where nuclear production facilities have been closed down, but employment has actually increased as environmental cleanup specialists have been hired to help deal with the contamination at the facility. In other cases, disruption may be exacerbated if the community is not only losing its present economic base, but has lost the capacity to return to a former economic base. Morgan City, Louisiana which had been the self-pro-claimed "shrimp capital of the world" in the 1950s is a good example of a community that lost its capacity to return to a former economic base. During the 1960s and 1970s the employment in this community shifted to offshore oil development. When oil prices collapsed in the 1980s, the community found it could not return to the shrimp industry because shrimp-processing facilities had closed down and most of the shrimp boats had been allowed to decay or left the area.

The Project Type and Setting

Projects and policy decisions which require and benefit from social impact assessment range from prison and plant sitings, to highway, reservoir, and power plant construction, to managing old growth forests to maintain a biologically diverse region. Accordingly projects types may range from isolated wilderness areas to urban neighborhoods, each with special characteristics that can affect social impacts. Social impacts (as well as economic and physical changes) will vary depending upon the type of development.

The following examples or projects types, settings, and policy changes are taken from the Digest of Environmental Impact Statements, published by The Information Resource Press:

- Mineral extractions, including surface and underground mining as well as new oil and gas drilling.

- Hazardous and sanitary waste sites, including the construction and operation of disposal sites for a variety of hazardous and sanitary wastes (also included are facilities that burn or otherwise destroy chemical and toxic wastes).
- Power plants, including both unclear and fossil fuel electrical generating facilities and associated developments.
- Reservoirs, including all water impoundments for flood control, hydropower, conservation, and recreation; and cooling lakes and diversion structures.
- Industrial plants (manufacturing facilities built and operated by the private sector, e.g., refineries, steel mills, assembly lines).
- Land use designations, e.g., from timber production to wilderness designation.
- Military and governmental installations, including base closures and openings.
- Schools, public and private, including primary, secondary, and university.
- Transportation facilities, including airports, streets, terminals.
- Linear developments, including subways, railroads, power lines, aqueducts, bike paths, bridges, pipelines, sewers, fences, walls and barrier channels, green belts, and waterways.
- Trade facilities, including businesses and shopping centers.
- Designation of sacred sites.
- Parks and preserves, refuges, cemeteries, and recreation areas.
- Housing facilities, including apartments, office buildings, and hospitals.

Identify Social Impact Assessment Variables

Social impact assessment variables point to measurable change in human population, communities, and social relationships resulting from a development project or policy change. After research on local community change, rural industrialization, reservoir and highway development, natural resource development, and social change in general, we suggest a list of social variables under the general headings of:

1. Population Characteristics
2. Community and Institutional Structures
3. Political and Social Resources
4. Individual and Family Changes
5. Community Resources

1. Population Characteristics mean present population and expected change, ethnic and racial diversity, and influxes and outflows of temporary residents as well as the arrival of seasonal or leisure residents.

2. Community and Institutional Structures mean the size, structure, and level of organization of local government including linkages to the larger political systems. They also include historical and present patterns of employment and industrial diversification,

the size and level of activity of voluntary associations, religious organizations and interests groups, and finally, how these institutions relate to each other.

3. Political and Social Resources refer to the distribution of power authority, the interested and affected publics, and the leadership capability and capacity within the community or region.

4. Individual and Family Changes refer to factors which influence the daily life of the individuals and families, including attitudes, perceptions, family characteristics and friend-ship networks. These changes range from attitudes toward the policy to an alteration in family and friendship networks to perceptions of risk, health, and safety.

5. Community Resources include patterns of natural resource and land use; the availability of housing and community services to include health, police and fire protection and sanitation facilities. A key to the continuity and survival of human communities are their historical and cultural resources. Under this collection of variables we also consider possible changes for indigenous people and religious sub-cultures.

Figure 3. Matrix Relating Project Stage to Social Impact Assessment Variables

Social Impact Assessment Variable	Planning/Policy Development	Implementation/ Construction	Operation/ Maintenance	Decommissioning/ Abandonment
Population Characteristics				
Population Change				
Ethnic and racial distribution				
Relocated populations				
Influx or outflows of temporary workers				
Seasonal residents				
Community and Institutional Structures				
Voluntary associations				
Interest group activity				
Size and structure of local government				
Historical experience with change				
Employment/income characteristics				
Employment equity of minority groups				
Local/regional/national linkages				
Industrial/commercial diversity				
Presence of planning and zoning activity				
Political and Social Resources				
Distribution of power and authority				
Identifications of stakeholders				
Interested and affected publics				
Leadership capability and characteristics				
Individual and Family Changes				
Perceptions of risk, health, and safety				
Displacement/relocation concerns				

Trust in political and social institutions				
Residential stability				
Density of acquaintanceship				
Attitudes toward policy/project				
Family and friendship networks				
Concerns about social well-being				
Community Resources				
Change in community infrastructure				
Native American tribes				
Land use patterns				
Effects on cultural, historical, and archaeological resources				

These variables are suggestive and illustrative and are only intended to provide a beginning point for the social assessor. Taylor et al., 1990 (and the U.S. Forest Service manual and handbook) use the four major categories of: population change; life style; attitudes, beliefs and values; and social organization. Brudge, 1994, uses the five categories of population impacts; community and institutional arrangements; conflicts between local residents and newcomers; individual family level impacts and community infrastructure needs. Branch, et al., 1984, use four categories of social impact assessment variables in their social organization model: direct project inputs; community resources; community social organization; and indicators of individual community well-being.

Figure 4. Social Impact Assessment Variables, by Project/Policy Setting (type) and Stage

	Project/Policy Stage			
Project/Policy Settings (type)	Planning/Policy Development	Construction/ Implementation	Operation/ Maintenance	Decommission/ Abandonment
Hazardous Waste Site	Perceptions of risk, health and safety	Influx of temporary workers	Trust in political and social institutions	Alteration in size of local government
Industrial Plant	Formation of attitudes towards the project	Change in community infrastructure	Chang in employment/ income characteristics	Change in employment equity of minority groups
Forest Service to Park Service Management	Interested and affected publics	Trust in political and social institutions	Influx of recreation users	Distribution of power/authority

At this point in discussing a SIA model we have demonstrated a conceptual procedure for both examining and accumulating information about social impacts. We have also outlined a matrix which demonstrates that social impacts will be different depending upon the project type and the stage of development. The next step in the development of the social impact assessment model is to suggest the social impact variables for stages in project development given different project type and setting.

Combining Social Impact Assessment Variables, Project/Policy Stage, and Setting

The four stages of project/policy development affect the social processes which produce changes in characteristics of the community or region. Social impact assessment specialists must construct a matrix to direct their investigation of potentially significant social impacts. Sample matrices are shown in Figure 3 and 4.

For each project/policy stage, the assessor should identify potential impacts on each social variable identified in the matrix. This approach ensures that no critical areas are overlooked. We emphasize that Figure 3 does not represent all social impact assess-ment variables that may be of interest for any project. It is presented to illustrate the issues which represent the beginning of such a task. The task for the asses-sor is to spell out the magnitude and significance of impacts for each cell like those identified in the illustrations.

Figure 4 provides an abbreviated illustration of how SIA variables (as suggested in Figure 3) might be applied within the context of both the setting type and the stage of a project. The first example is the siting of a hazardous waste facility. Perceptions about problems of public health and safety could emerge during the early planning stage. If a decision is made to go ahead, construction would be accompanied by an influx of temporary workers. In the case of the industrial plan, community infrastructure support might be needed during construction, while changes in the industrial focus on the community might occur during the operational stage. These analytic procedures would be repeated for each of the SIA variables for each stage of the project. Procedures for accomplishing this task are outlined in Section V (principles for doing social impact assessment).

Steps in the Social Impact Assessment Process

The social impact assessment itself should contain the ten steps outlined in Figure 5. These steps are logically sequential, but often overlap in practice. This sequence is patterned after the environmental impact assessment steps as listed in the CEQ guidelines.

1. Public Involvement - Develop an effective public plan to involve all potentially affected publics.

This requires identifying and working with all potentially affected groups starting at the very beginning of planning for the proposed action. Groups affected by proposed actions include those who live nearby; those who will hear, smell or see a development; those who are forced to relocate because of a project; and those who have interest in a new project or policy change but may not live in proximity. Others affected include those who might normally use the land on which the project is located (such as farmers who have to plow around a transmission line). Still others include those affected by the influx of seasonal residents who may have to pay higher prices for food or rent, or pay higher taxes

to cover the cost of expanded community services. Once identified, representative from each group should be systematically interviewed to determine potential areas of concern/impact, and ways each representative might be involved in the planning decision process. Public meetings by themselves are inadequate for collecting information about public perceptions. Survey data can be used to define the potentially affect-ed population. In this first step, the pieces are put in place for a public involvement program which will last throughout the environmental and social impact assessment process.

2. Identification of Alternatives - Describe the proposed action or policy change and reasonable alternatives.

In the next step, the proposed action is described in enough detail to begin to identify the data requirements needed from the project proponent to frame the SIA. At a minimum, this includes:

- Locations
- Land requirements
- Needs for ancillary facilities (roads, transmission lines, sewer and water lines)
- Construction schedule
- Size of the work force (construction and operation, by year or month)
- Facility size and shape
- Need for a local work force
- Institutional resources

The list of social impact assessment variables shown in Figure 3 is a guide for obtaining data from policy or project proponents. Sometimes the description of the proposed alternatives may not include all the information needed for an SIA. Another problem is the provision of summary numbers when disaggregated numbers are needed. For example, the social assessor may be given numbers for the total peak work force of a construction project, when information is needed on local, in-migrating, and non-local commuting workers for each phase of construction.

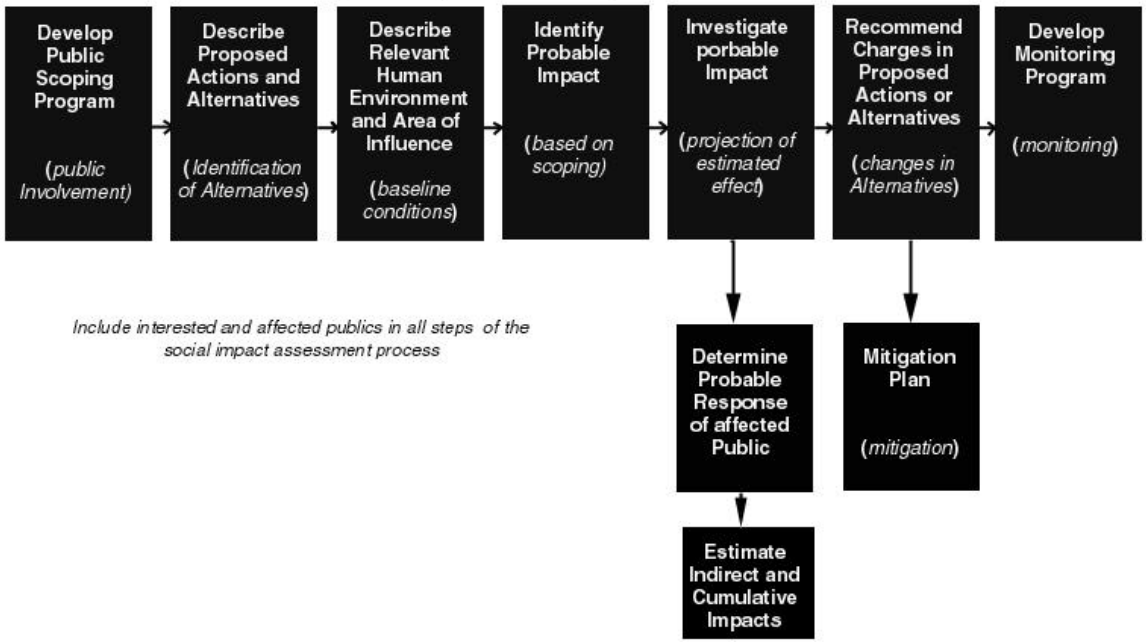
3. Baseline Conditions - Describe the relevant human environment/area of influence and baseline conditions.

The baseline conditions are the existing conditions and past trends associated with the human environment in which the proposed activity is to take place. This is called the baseline study. For construction projects, a geographical area is identified along with the distribution of special populations at risk; but for programs, policies, or technology assessments, the relevant human environment may be a more dispersed collection of interested and affected publics, interest groups, organizations, and institutions. The generic set of dimensions for investigation listed below would include the following aspects of the human environment for construction projects and geographically-located programs and policies (the social impact assessment variables listed in Figure 3 require similar information):

- Relationships with the biophysical environment, including ecological setting; aspects of the environment seen as resources or problems; areas having economic, recreational, aesthetic or symbolic significance to specific people; residential arrangements and living patterns, including relationships among communities and social organizations; attitudes toward environmental features; and patterns of resource use.
- Historical background, including initial settlement and subsequent shifts in population; developmental events and eras, including experience with boom-bust effects, as well as a discussion of broader employment trends; past or ongoing community controversies, particularly those involving technology or the environment; and other experiences likely to affect the level of distribution of the impacts on local receptivity to the proposed action.
- Political and social resources, including the distribution of power and authority; the capacities of relevant systems or institutions (e.g., the school system); friendship networks and patterns of cleavage or cooperation among potentially affected groups; levels of residential stability; distributions of socio-demo-graphic characteristics such as age and ethnicity; presence of distinctive or potentially vulnerable groups (e.g., low income); and linkages among geo-political units (federal, state, county, local and inter-local).
- Culture, attitudes and social-psychological conditions, including attitudes toward the proposed action; trust in political and social institutions, perceptions or risks; relevant psychological coping and adjustment capacity; cultural cognition of society and environment; assessed quality of life; and improvement values that may be relevant to or affected by the proposed action.
- Population characteristics including the demo-graphics of relevant groups (including all significant stakeholders and sensitive populations and groups); major economic activities; future prospects; the labor markets and available work force; unemployment and underemployment; population and expected changes; availability of housing, infrastructure and services; size and age structure of households; and seasonal migration patterns.

The level of effort that is devoted to the description of the human environment should be commensurate with the size, cost, and degree of expected impacts of the proposed action. At a minimum, the existing literature on comparable or analogous events, knowledgeable experts, and readily available documents such as government reports should be consulted. On-site investigations and the use of previous field studies and surveys are recommended, as well as rapid appraisals and mini-surveys.

Figure 5. Steps in the Social Impact Assessment Porcess



4. Scoping - After obtaining a technical under-standing of the proposal, identify the full range of probable social impacts that will be addressed based on discussion or interviews with numbers of all potentially affected.

After initial scoping, the social impact assessor selects the SIA variables for further assessment situations. Consideration needs to be devoted both to the impacts perceived by the acting agency and to those perceived by affected groups and communities. The principal methods to be used by experts and interdisciplinary terms are reviews of the existing social science literature, public scoping, public surveys, and public participation techniques. It is important for the views of affected people to be taken into consideration. Ideally, all affected people or groups contribute to the selection of the variables assessed through either a participatory process or by review and comment on the decision made by responsible officials and the interdisciplinary team.

Relevant criteria for selecting significant impacts comparable to those spelled out in the CEQ Regulations (40 CFR 1508.27) include the:

- Probability of the event occurring;
- Number of people including indigenous populations that ill be affected;
- Duration of impacts (long-term vs. short-term);
- Value of benefits and costs to impacted groups (intensity of impacts);
- Extent that the impact is reversible or can be mitigated;
- Likelihood of causing subsequent impacts;
- Relevance to present and future policy decisions;

- Uncertainty over possible effects; and
- Presence or absence of controversy over the issue.

5. Projection of Estimated Effects - Investigate the probable impacts.

The probable social impacts will be formulated in terms of predicted conditions without the actions (baseline projection); predicted conditions with the actions; and predicted impacts which can be interpreted as the differences between the future with and without the proposed action. The empirical procedures is based on the social impact assessment model outlined in Section III.

Investigation of the probable impacts involves five major sources of information:

1) Data from project proponents;
2) Records of previous experience with similar actions as represented in reference literature as well as other EIS's;
3) Census and vital statistics;
4) Documents and secondary sources;
5) Field research, including informant interviews, hearings, group meeting, and surveys of the general population.

The investigation of the social impacts identified during scoping is the most important component. Methods of projecting the future lie at the heart of social assessment, and much of the process of analysis is tied up in this endeavor. In spite of the long lists of methods available, most fall into the following categories:

- **Comparative method** straight-line trend projects taking an existing trend and simply projecting the same rage of change into the future);
- **Population multiplier methods** (each specified increase in population implies designated multiples of some other variable, e.g. jobs, housing units);
- **Scenarios** (1) logical-imaginations based on construction of hypothetical futures through a process of mentally modeling the assumptions about the variables in question; and (2) fitted empirical-similar past cases used to analyze the present case with experts adjusting the scenario by taking into account the unique characteristics of the present case;
- **Expert testimony** (experts can be asked to present scenarios and assess their implications);
- **Computer modeling** (involving the mathematical formulation of premises and a process of quantitative weighing of variables);
- **Calculation of "future foregone"** (a number of methods have been formulated to determine what options would be given up irrevocably as a result of a plan or project, e.g., river recreation and agricultural land use after the building of a dam).

The record of previous experiences is very important to the estimation of future impacts. It is largely contained in case reports and studies and the experience of experts.

Variations in the patterns of impacts and responses in these cases also should be registered. Expert knowledge is used to enlarge this knowledge base and to judge how the study case is likely to deviate from the typical patterns. The documents and secondary sources provide information on existing conditions, plans, reported attitudes and opinions; and contribute to the case record. The field research involves interviews with persons who have different interests at stake, different perspectives, and different kinds of expertise. Wherever feasible, it should also involve a search through a wide range of documentation that is often available (in forms that range from official statistics and the minute of meeting to the patterns of coverage and letters to the editors). The opinions of various individuals and groups toward the proposed change should also be part of the record. Surveys are valuable to assess public opinion properly, because spokes-persons for groups do not always represent the views of the rank-and-file. Statements at public meeting and by spokespersons should not be used as projections, but as possible impacts to be evaluated through other means.

6. Predicting Responses to Impacts - Determine the significance to the identified social impacts.

This is a difficult assessment task often avoided, but the responses of affected parties frequently will have significant subsequent impacts. After direct impacts have been estimated the assessor must next estimate how the affected people will respond in terms of attitude and actions. Their attitudes before implementation predicts their attitudes afterwards, though there are increasing data that show fears are often overblown and that expected (often promised) benefits fail to meet expectations. This literature should be consulted.

The actions of affected groups are to be esti-mated using comparable cases and interviews with affected people about what they expect to do. So much depends on whether local leader-ship arises (and the objectives and strategies of these leaders), that this assessment step often is highly uncertain, but at least policy makers will be notified of potential problems and unexpected results.

This step is also important because adaption and response of affected parties can have consequences of their own-whether for the agency that proposes an action (as when political pro-tests stalls a proposal) or for the affected communities, whether in the short-term or in the long-term (as in the previously noted example of Morgan City, Louisiana). Patterns in previous assessments guide this analysis, and expert judgment and field investigations are used to see whether they study case in following the typical patterns or how it is developing uniquely. Being able to show potentially affected people that significant impacts are being incorporated into the assessment is critical to the success of this step.

7. Indirect and Cumulative Impacts - Estimate subsequent impacts and cumulative impacts.

Indirect impacts are those caused by the direct impacts; they often occur later than the direct impact, or farther away. Cumulative impacts are those impacts which result from the incremental impacts of an action added to other past, present, and reasonably foreseeable future actions regardless of which agency or person undertakes them (see 40 CFR 1508.7). A community residential and retail growth and pressures on government services following the siting of a major project are examples of indirect and cumulative impacts. While they are more difficult to estimate precise-ly than direct and cumulative impacts be clearly identified in the SIA.

Figure 6. United States Federal Legislation and Executive Orders Addressing Resource Development and Socioeconomic Mitigation

Date	Federal Law	Socioeconomic Mitigation
1920	Mineral Leasing Act (41 Stat 449)	Allowed 37.5% of receipts to be returned to local government for schools and roads; required protection of subsistence habitats.
	Coastal Energy Impact Program	Places Federal government in a secondary role behind State and local governments.
1969	National Environmental Policy Act	Required human and community conditions to be considered in the assessment process.
1975	Federal Coal Leasing Amendments Act	Increased percent of revenues for socioeconomic mitigation.
1976	Federal Land Policy Management Act	Required revenues received by States to go to impacted areas.
1976	Mineral Leasing Act Amendments	Increased the amount of receipts to 50% and broadened categories of receipts that could be spend on courts, sewers, infrastructure, etc.
1978	Power Plant and Industrial Fuel Use Act	Federal government can pay for planning and land acquisition for housing and community facilities in coal/uranium development.
1978	Defense Economic adjustment programs Executive Order	Economic adjustment committee and encourages uniform economic impact analysis and information sharing.
1981	Military Construction and Authorization Act	Allows up to $1 million of Federal funds per county for impacts.

8. Changes in Alternatives - Recommended new or changed alternatives and estimate or project their consequences.

Each new alternative or recommended change should be assessed separately. The methods used in step five (estimation), apply here but usually on a more modest scale. More innovative alternatives and changes probable should be presented in an experimental structure. Expert judgment and scenarios are helpful in developing project and policy alternations. The number of iterations here will depend upon time, funding, and the magnitude of the project or policy changes.

9. Mitigation - Develop a mitigation plan.

A social impact assessment not only forecasts impacts, it should identify means to mitigate adverse impacts. Mitigation includes avoiding the impact by not taking or modifying an action; minimizing, rectifying, or reducing the impacts through the design or operation of the project or policy; or compensating for the impact by providing substitute facilities, resources, or opportunities (see 40 CFR 1508.20).

Ideally, mitigation measures are built into the selected alternative, but it is appropriate to identify mitigation measures even if they are not immediately adopted or if they would be the responsibility of another person or government unit. (Federal legislation which mandates mitigation measures is shown in Figure 6.)

We suggest a sequencing strategy to manage social impacts modeled after one used with wet-land protection and other natural resource issues. During the first sequence, wetlands managers strive to avoid all adverse impacts. In the second sequence, managers strive to minimize any adverse impacts that cannot be avoided. During the third sequence, managers compensate for adverse impacts. Compensation for the loss of a wetland, for example, could be to acquire a different wetland, enhance a degraded site, or create a new wetland. The amount of compensation can be based on the type of wetland or resource lost, the severity of the impact, and the location of the wetland mitigation site.

The two steps of sequencing-avoiding and minimizing-can apply to the project itself or to the host community or the impacted region. For example, the project may be revised to avoid or minimize adverse social impacts (e.g., extend the construction period to minimize in-migration), or the community may be able to take steps to attenuate, if not avoid, and adverse effects. Application of the sequencing concept for the mitigation of adverse social impacts requires that the assessor first rank the level of importance of each significant SIA variable determined during the estimated effects step.

The first step in evaluating potential mitigation for each variable is to determine whether the proponent could modify the project or pro-posed policy to avoid the adverse effects. For example, a road that displaces families could be rerouted. The next step in the sequencing process is to identify ways to minimize adverse social impacts. For example, most citizens are uncomfortable with the idea of locating a perceived as undesirable facility near their community. Attitudes (particularly negative ones) formed about the project cannot be eliminated, but might be moderated if the public has complete information about the proposed development, are included in the decision making process, or are provided with structural arrangements that assure safe operations.

There are at least three benefits of identifying unresolvable social impacts that may result from a proposed project. The first is identifying methods of compensating individuals and the community for unavoidable impacts, The second occurs when the community may identify ways of enhancing other quality of life variables as compensation or the adverse effects. The third happens when the identification of unresolvable social impacts makes community leaders and project proponents more sensitive to the feelings of community

residents. By articulating the impacts that will occur and making efforts to avoid or minimize the adverse consequences, or compensating the residents or the community for the losses, benefits may be enhanced and avoidable conflicts can be managed or minimized.

10. Monitoring – Develop a monitoring program.

A monitoring program should be developed that is capable of identifying deviations from the proposed action and any important unanticipated impacts. A monitoring plan should be developed to track project and program development and compare real impacts with projected ones. It should spell out (to the degree possible) the nature and extent of additional steps that should take place when unanticipated impacts or impacts larger than the projections occur.

Monitoring programs are particularly necessary for projects and programs that lack detailed information or that have high variability or uncertainty. It is important to recognize, in advance, the potential for "surprises" that may lie completely outside the range of options considered by the SIA. If monitoring procedures cannot be adequately implemented, then mitigation agreements should acknowledge the un-certainty faced in implementing the decision.

It's generally only at this stage that the community or affected group has the influence to "get it in writing." A recent example of a monitoring program with subsequent provision for mitigation was negotiated between the U.S. Department of Energy, the State of Texas and the Super Conducting Super Collider Laboratory. The process allowed for the payment of approximately $800,000 to local jurisdictions to monitor the impacts of the construction activity.

Principles for Social Impact Assessment

In general, there is consensus on the types of impacts that need to be considered (social, cultural, demo-graphic, economic, social-psychological, and often political impacts); on the need for the SIA to include a discussion of the proposed action (i.e., the proposed facility, project, development, policy change, etc.); on the components of the human environment where the impacts are likely to be felt (affected neighbor-hoods, communities, or regions); on the likely im-pacts (generally defined as the difference between the likely future of the affected human environment with versus without the proposed policy and project); and on the steps that could be taken to enhance positive impacts and to mitigate any negative ones (by avoid-ing them, if possible, by modification and minimiza-tion, and by providing compensation for any negative impacts that cannot be avoided or ameliorated).

As SIA textbooks point out Brudge, 1994; Branch et.al., 1984; Finsterbusch, 1980; Freudenburg, 1986; Taylor, et.al., 1990) and as suggested by the Council of Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (U.S. Council on Environmental Quality, 1986) the SIA practitioner should

focus on the more significant impacts, should provide quantification where feasible and appropriate, and should present the social impacts in a manner that can be understood by decision-makers and community leaders.

The following principles augment the guidance provided in earlier sections. These principles are benchmarks for conducting an SIA. They include:

- Joint role of SIA and public involvement in identifying affected groups;
- Concept of impact equity (who "wins" and who "loses") as it concerns sensitive groups;
- Focus of an SIA—The possible impacts identified by the affected public and impacts identified through social science expertise;
- Explicit identification methods, assumptions, and determination of significance;
- Feedback to project planners;
- Use of SIA practitioners to do SIA;
- Establishment of mitigation and monitoring or as joint agency-community responsibility;
- Identifying appropriate data source for SIA; and
- Planning for gaps in data.

1. Involve the Diverse Public – Identify and involve all potentially affected groups and individuals.

A public involvement and conflict management program can beneficially be closely integrated with the development of the social impact assessment process. A lack of understanding still exists among many decision-makers as to how public involvement fit within the planning process. Public involvement can complement and fit within SIA process by identifying poten-tially affected groups, and by interpreting the meaning of impacts for each group. Public involvement plays an important role in recruiting participants for the planning process who are truly representative of affected groups. Public involvement should be truly interactive, with communication flowing both ways between the agency and affected groups.

2. Analyze Impact Equity – Clearly identify who will win or who will lose, and emphasize vulnerability under-represented groups.

Impacts should be specified differentially affected groups and not just measured in the aggregate. Identification of all groups likely to be affected an agency action is central to the concept of impact equity. There can always be winners and losers as the result of a decision to construct a dam, build a highway or close an area to timber harvesting, However, no category of persons, particularly those that might be considered more sensitive or vulnerable as a result of age, gender, ethnicity, race, occupation or other factors, should have to bear the brunt of adverse social impacts. While most proposed projects or policies are not zero-sum situations, and there may be varying benefits for

almost all involved, SIA has a special duty to identify those whose adverse impacts might get lost in the aggregate benefits.

Figure 7. Principles for Social Impact Assessment
*** Involve the diverse public** Identify and involve all potentially affected groups and individuals
*** Analyze impact equity** Clearly identify who will win and who will lose and emphasize vulnerability of under-represented groups
*** Focus the assessment** Deal with issues and public concerns that really count, not those that are just easy to count
*** Identify methods and assumptions and define significance** Describe how the SIA is conducted, what assumptions are used and how significance is determined.
*** Provide feedback on social impacts to project planners** Identify problems that could be solved with changes to the proposed action or alternatives.
*** Use SIA practitioners** Trained social scientist employing social science methods will provide the best results.
*** Establish monitoring and mitigation programs** Manage uncertainty by monitoring and mitigating adverse impacts.
*** Identify data sources** Use published scientific literature, secondary data and primary data from the affected area.
*** Plan for gaps in data** Evaluate the missing information, and develop a strategy for proceeding.

The impact assessment practitioner must be attentive to those groups that lack political efficacy; such as groups low in political or economic power which often are not heard, or do not have their interests strongly represented.

Examples abound in the literature of groups that could be considered sensitive, vulnerable, or low in power. The elderly have been identified as a category of persons sensitive to involuntary displacement and relocation. Children have suffered learning problems resulting from long-term exposure to various forms of transportation noise and local pollution (e.g., vehicular traffic, airports). Minorities and the poor are disproportionately represented in groups low in power; low-income; minority neighborhoods frequently were targeted in the 1960's as optimal sites for road construction and similar public works projects. Persons with some form of disability or impairment constitute another sensitive category with important needs. Farmers often are affected by transmission lines, water projects or developments that take large amounts of land. The special impacts to those persons should be highlighted in an SIA, not lost in summary statistics.

3. Focus the Assessment – Deal with issues and public concerns that really count, not those that are just easy to count. Impacts Identified by the Public.

Social impact assessment practitioners must contend with stringent time and resource constraints that affect the scope of the assessment and how much can be done in the time available. Given such constraints, a central question emerges: "If you cannot cover the

social universe, what should you focus on?" The answer is to focus on the most significant impacts in order of priority, and all significant impacts for all impacted groups must be identified early using a variety of rapid appraisal or investigative techniques. Clearly, impacts identified as important by the public must be given high priority. Many of these will surface during the NEPA scoping process or earlier if a survey is used to identify the potentially-affected populations. However, as noted earlier, some groups low in power that may be adversely affected do not necessarily participate in early project stages. It is essential that broadly-based public involvement occur throughout the life of the SIA; but additional means (e.g., key informants, participant observation, and where possible, surveys) often must be used to ensure that the most significant public concerns are addressed.

Impacts Identified by SIA Practitioners. SIA practitioners have the expertise to help prioritize issues using a review of literature and professional experience. Often they will suggest the study of issues unrecognized by either the public or the agencies.

4. Identify Methods and Assumptions and Define Significance – Describe how the SIA is conducted, what assumptions are used and how significance is determined.

The methods and assumptions used in the SIA should be made available and published prior to a decision in order to allow decision makers as well the public to evaluate the assessment of impacts (as required by NEPA). Practitioners will need to consult the CEQ Regulations. Definitions and examples of effects (direct, indirect, and cumulative) are provided in 40 CFR 1508.7 and 1508.8; "effects" and "impacts" are used synonymously. The CEQ regulations are clear that an environmental impacts statement has to focus on impacts found to be significant.

Significance in terms of context and intensity considerations is defined in 40 CFR 1508.27. Context includes such considerations as society as a whole, affected regions, affected interests and locality (e.g., when considering site-specific projects, local impacts assume greater importance than those of a regional nature). Intensity refers to the dimensions presented under Scoping in Section IV, as well as consideration of health and safety, endangered species or unique human resources, precedents and laws. While these criteria are helpful in judging significance, the SIA practitioner also needs to consult individual agency procedures for NEPA compliance. Some of these list additional social impacts that the agency must consider even if not always significant.

5. Project Planners – Identify problems that could be solved with changes to the proposed action or alternatives. Provide Feedback on Social Impacts.

Findings from the SIA should feed back into project design to mitigate adverse impacts and enhance positive ones. The impact assessment, therefore, should be designed as a dynamic process involving cycles of project design, assessment, redesign, and reassessment. This process is often carried out informally with project designers prior to publication of the draft assessment for public comment; public comments on a draft EIS can contribute importantly to this process of feedback and modification.

6. Use SIA Practitioners – Trained social scientists employing social science methods will provide the best results.

The need for professionally qualified, competent people with social science training and experience cannot be overemphasized. An experienced SIA practitioner will know the data, and be familiar and conversant with existing social science evidence pertaining to impacts that have occurred elsewhere, which may be relevant to the impact area in question. This breadth of knowledge and experience can prove invaluable in identifying important impacts that may not surface as public concerns or as mandatory considerations found in agency NEPA compliance procedures. A social scientist will be able to identify the full range of important impacts and then will be able to select the appropriate measurement procedures.

Having social scientist as part of the interdisciplinary EIS team will also reduce the probability that an important social impact could go unrecognized. In assessing social impacts, if the evidence for a potential type of impact is not definitive in either direction, then the appropriate conservative conclusion is that it cannot be ruled out with confidence. In addition, it is important that the SIA practitioner be conversant with the technical and biological perspectives brought to bear on the project, as well as t he cultural and procedural context of the agency they work with.

7. Establish Monitoring and Mitigation Program – Manage uncertainty by monitoring and mitigation adverse impacts.

Crucial to the SIA process is monitoring significant social impact variables and any programs which have been put into place to mitigate them. As indicated earlier, the identification of impacts might depend on the specification of contingencies. For example, if the in-migration of workers during the construction phase work force is 1000, then the community's housing will be inadequate to meet the need, but if it is only 500, then the impact can be accommodated by currently vacant units. Identifying a monitoring infrastructure needs a key element of the local planning process. Two key points:

a) Monitoring and mitigation should be a joint agency and community responsibility.
b) Both activities should occur on an iterative basis throughout the project life cycle. Depending on the nature of the project and time horizons for completion, the focus of long-term responsibility for monitoring and mitigation is not easily defined. Research shows that trust and expertise are key factors in choosing the balance between agency and community monitoring participation. Few agencies have the resources to continue these activities for an extended period, but local communities should be provided resources to assume a portion of the monitoring and mitigation responsibilities.

8. Identify Data Source – Published scientific literature, secondary data, and primary data from the affected area.

These three sources should be consulted for all SIA's. Balance among the three may vary according to the type of the proposed action, as well as specific considerations noted below, but all three will be relevant.

Published Scientific Literature – The SIA should draw on existing, previously reviewed and screened social science literature which summarizes existing knowledge of impacts based on accepted scientific standards. Examples include journal articles, books, and reports available from similar projects. A list of easy-to-obtain, recommended sources is provided at the end of this monograph. Existing documentation is useful in identifying which social impacts are likely to accompany a proposed action. When it is possible to draw potentially competing interpretations from the existing literature, the SIA should provide a careful discussion of relative methodological merits of available studies. As pointed out in Section III, the best guidance for future expectations is past experience; therefore, consideration of existing literature should err on the side of inclusiveness, not on exclusion of potentially relevant cases. Caution is needed when the SIA presents a conclusion that is contradicted by the published literature; in such cases, the reasons for the differences should be explicitly addressed. Anthropological data on rural and ethnically- and racially-diverse communities is best understanding the cultural context of the impacted community.

Secondary Data Sources - The best known secondary sources of these are the Census, vital statistics, geographical data, relevant agency publications, and routine data collected by state and federal agencies. Examples of other secondary data sources include agency caseload statistics (e.g., from mental health centers, social service agencies and other human service providers, law enforcement agencies, and insurance and financial regulatory agencies); published and unpublished historical materials (often available in local libraries, historical societies, and school district files); complaints produced by booster and/or service organizations (such chambers of commerce, welcome wagon organizations, and church groups); and the files of local news-papers. These secondary sources can be used in conjunction with key-informant interviews, to allow for verification of informant memories and to be alert for potential sources of bias in other data.

Primary Data from the Affected Area - Survey research, oral histories and informant interviews are examples of primary data which may be collected to verify other data sources. If a social assessor concludes that community impacts will differ from those documented elsewhere, such conclusions must be based on the collection and analysis of primary data which specifically show why such alternative conclusions are more credible. Also, local residents often have important forms of expertise, both about local socioeconomic conditions and about the broader range of likely impacts. Because of its unique history and structure, each community may react to a development event policy change differently than other communities.

9. Plan for Gaps in Data

SIA practitioners often have to produce an assessment in the absence of all the relevant or even the necessary data. The three elements of this principle are intended to supplement the guidance already provided by CEQ Regulations at 40 CFR 1502.22.

> When an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an environmental impact statement and there is incomplete or unavailable information, the agency shall always make clear that such information is lacking.(a) If the incomplete information…is essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant, the agency shall include the information in the environmental impact statement.

Only if the relevant information "cannot be obtained because the overall costs of obtaining it are exorbitant or the means to obtain it are not known," is the EIS permitted a gap in relevant information. In such cases, however, the EIS needs to include: 1) a statement of relevance of the incomplete or unavailable information… 2) a summary of existing credible scientific evidence [that] is relevant…, and 3) the agency's evaluation of the likely and possible impacts based upon theoretical approaches or research methods generally accepted in the scientific community (40 CFR 1502.22).

The following three elements are acceptable procedures to the social science community when there are shortages of resources necessary to do the desired data collection.

- **It is more important to identify likely social impacts than to precisely quantify the more obvious social impacts.** All assessors strive to identify and quantify significant impacts, thereby providing decision makers and the affected publics with information that is both as complete and as accurate as possible. In cases where the desirable goal cannot be met, it is better to be roughly correct on important issues than to be precisely correct on unimportant issues. Within the context of the social impact statement, there are two important differences between impact identification (what are the general categories or types of impacts that are likely to occur [see Figure 3]) and impact evaluation (precisely how significant and those impacts likely to be). Research has identified the social impacts of many types of actions, and experienced SIA practitioner can identify plausible and potentially significant impacts relatively quickly and efficiently. On the other hand, an accurate evaluation is a resource-intensive process and deals with the question of significance. Research on the decision-making process has found that experts and policy makers were particularly prone toward premature closure. Given a partial listing of potential impacts experts tended to assume they have been given a complete list and in most cases, failed to recognize the potential impacts that had been omitted from consideration. While empirical estimates can appear to be quite precise, demographic and economic projections have been shown by empirical analysis to have an average absolute error in the range of 50-100 percent. We support the use of qualitative and quantitative measures of social impact assessment variables, but realize that the

evaluation of significance has an important judgment component.

- **It is important to be on the "conservative" side in reporting likely social impacts.** The purpose of the EIS us is to provide an evenhanded treatment of the potential impacts, offering a scientifically reasonable assessment of the probable impacts in advance of the development event. It is a very different matter from providing solid proof of impacts after the impacts occur and all the evidence is in! All EISs and SIAs are by their nature anticipatory. Questions about the "proof" of impacts can be asked in an apparently scientific language, but cannot be answered with the true confidence in advance of the actions in question. In assessing social and economic impacts, accordingly, if the evidence for a potential type of impact is not definitive in either direction, the conservative conclusion is that the impact cannot be ruled out with confidence, not that the impact is not proven. In cases of doubt, in terms of statistical terminology, the proper interpretation is the Type II test for power or sensitivity, and not the Type I test for the strength of consistency of an association.

- The less reliable data there are on the effects of the projects or policy change, the more important it is to have SIA work performed by competent, professional social scientists. Resource limitations will not always allow for SIAs to be done by experienced social scientists. The two following situations are ones in which it may be appropriate to proceed without professional social scientists' involvement in an SIA. 1) In cases where proposed actions are considered by persons within the agency with social science training, and by those in the potentially affected community, to likely cause only negligible or ephemeral social impacts. 2) In cases where a significant body of empirical findings is available from the social science literature, which can be applied fairly directly to the proposed action in question, and is referenced, summarized, and cited by the person(s) preparing the SIA section of the EIS. If one of these two conditions is not present, the absence of professional social science expertise would be imprudent for both the agency and affected groups and communities; and SIA would be speculative and not well grounded. If one of these two conditions is not present, the absence of professional social science expertise would be imprudent for both the agency and affected groups and communities; and SIA would be speculative and not well grounded.

Conclusion

Social impact assessment is predicted on the notion that decision-makers should understand the consequences of their decisions before they act, and that the people affected will not only be appraised of the effects, but have the opportunity to participate in designing their future. The social environment is different than their future. The social environment is different than the natural environment because it reacts in anticipation of change, but can adapt in reasoned ways to changing circumstance in part of the planning process. In addition, persons in different social settings interpret change in different ways, and react in different ways. Perhaps because of this complexity, or the political consequences of making explicit the social consequences of projects and programs,

social impact assessment has not been well-integrated into agency decision –making. The guidelines and principles presented herein are designed to assist agencies and other institutions in implementing SIA within the context of NEPA process. If a well-prepared SIA is integrated into the decision-making process, better decisions will result.

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American Anthropologist
Environmental Impact Assessment Review
Human Organization
Impact Assessment and Project Appraisal (formerly Impact Assessment Bulletin)
Project Appraisal
Rural Sociology
Society and Natural Resources

Professional Associations

International Association for Impact Assessment (IAIA),
was organized in 1980 to bring together researchers, government
employees, practitioners, and users of all types of impact assessment.
Write: IAIA International Headquarters, 1330 23rd Street South, Fargo, ND 58103 USA.

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